UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,919	01/08/2007	Mats Gustafsson	05822.0336USWO	5539

23552 7590 06/16/2008

MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER	
HANSEN, JONATHAN M	

ART UNIT	PAPER NUMBER
2886	

MAIL DATE	DELIVERY MODE
06/16/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,919	GUSTAFSSON ET AL.	
	Examiner	Art Unit	
	JONATHAN M. HANSEN	2886	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-8* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-8* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *04/07/06*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

Claims **1-8** are objected to because of the following informalities: The claims contain numerous misspellings and grammatical errors. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims **7 and 8** are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. The omitted steps are: How the method accomplishes the separation and counting of particles in a particle blend; and how the method accomplishes calculating the volume ratio between particles in a particle blend.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim **6** is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The claim includes the term "a tangible medium". The use of this language is non-statutory due to the fact that "a tangible medium" could be taken to read, for example, on a piece of paper. The claim should be amended to read "a computer readable medium" to become statutory.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims **1, 2, and 4-6** are rejected under 35 U.S.C. 102(b) as being anticipated by **Us Patent 4,565,449 to Grego**.

In regards to claim **1**, Grego discloses the method of determining the refractive index of an object compared to a refractive index of a surrounding medium, wherein:

exposing said sample to a laser object beam and letting the object beam interfere with a laser reference beam to obtain a hologram (col. 4, ll. 13-36),

analyzing the hologram for phase information (col. 4, ll. 48-54),

determining if the refractive index of the object is higher or lower than the refractive index of the surrounding medium based on said phase information (col. 4, ll. 48-54).

In regards to claim **2**, Grego discloses the method, wherein said analyzing and determination are performed by a computer (abstract).

In regards to claim **4**, Grego discloses and shows in Figure 1 below, a device for determining the refractive index of an object compared to a refractive index of a surrounding medium:

wherein He/Ne laser (4) (applicant's laser source) for exposing said sample to a laser object beam and letting the object beam interfere with a laser reference beam to obtain a hologram,

a phase comparator (15) and a calculator (17) (applicant's computer) for analyzing the hologram for phase information, and for determining if the refractive index of the object is higher or lower than the refractive index of the surrounding medium based on said phase information (abstract).

Further, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function. Limitations following "configured to," "adapted for," "designed to," "can be," "for," and "capable of," or are statements of intended use are not positive limitations and thus are not given patentable weight. See MPEP 2111.04 and 2114.

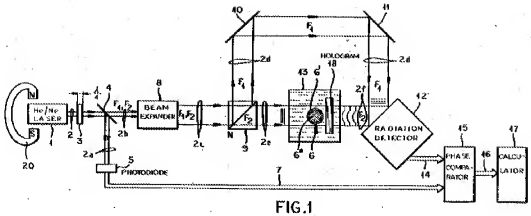

FIG.1

In regards to claim **5**, Grego discloses the device, wherein:

said test object (6) having a core (6") with a non-uniform index of refraction (applicant's first and second indices of refraction) and a cladding (6') and immersion liquid (13) with a constant refractive index (applicant's medium); and

said calculator (17) (applicant's computer) determining a phase gradient for a multiplicity of phase-difference values to produce a refractive index profile (col. 4, ll. 48-54).

Further, while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function.

It is also understood, that while the object under test is a significant portion of claim 5, it has been held that the material or article worked upon does not limit apparatus claims. Therefore, the limitations to the object are given no patentable weight. See MPEP 2115.

Also, limitations following "configured to," "arranged to," "adapted for," "designed to," "can be," "for," and "capable of," or are statements of intended use are not positive limitations and thus are not given patentable weight. See MPEP 2111.04 and 2114.

In regards to claim **6**, Grego discloses a computer program for execution by a calculator (applicant's computer) for performing the method (abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims **3, 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grego**, in view of **US Patent 5,793,485 to Gourley**.

In regards to claim **3**, Grego discloses the method wherein said test object (6) having a core (6") with a non-uniform index of refraction (applicant's first and second indices of refraction) and a cladding (6') and immersion liquid (13) with a constant refractive index (applicant's medium).

Grego is silent to counting the number of particles having a first refractive index and counting the number of particles having a second refractive index in a specific area of said sample.

However, Gourley teaches a resonant cavity apparatus that determines particle size, shape, identification or other characteristics of cells or particles, as well as a means for manipulating, sorting or eradicating cells (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Grego to include the separation and counting particles in a particle blend and calculating the volume ratio between particles in a particle blend for the advantage of high-speed, automated analysis of cells and/or particles, as taught by Gourley.

In regards to claims **7 and 8**, Grego is silent to the method for the separation and counting particles in a particle blend and calculating the volume ratio between particles in a particle blend.

However, Gourley teaches a resonant cavity apparatus that determines particle size, shape, identification or other characteristics of cells or particles, as well as a means for manipulating, sorting or eradicating cells (abstract).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Grego to include the separation and counting particles in a particle blend and calculating the volume ratio between particles in a particle blend for the advantage of high-speed, automated analysis of cells and/or particles, as taught by Gourley.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN M. HANSEN whose telephone number is (571)270-1736. The examiner can normally be reached on Monday through Friday 9:30AM to 6:00PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tarifur Chowdhury can be reached on 571-272-2287. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JMH 06/08/2008

/TARIFUR R CHOWDHURY/
Supervisory Patent Examiner, Art Unit 2886